

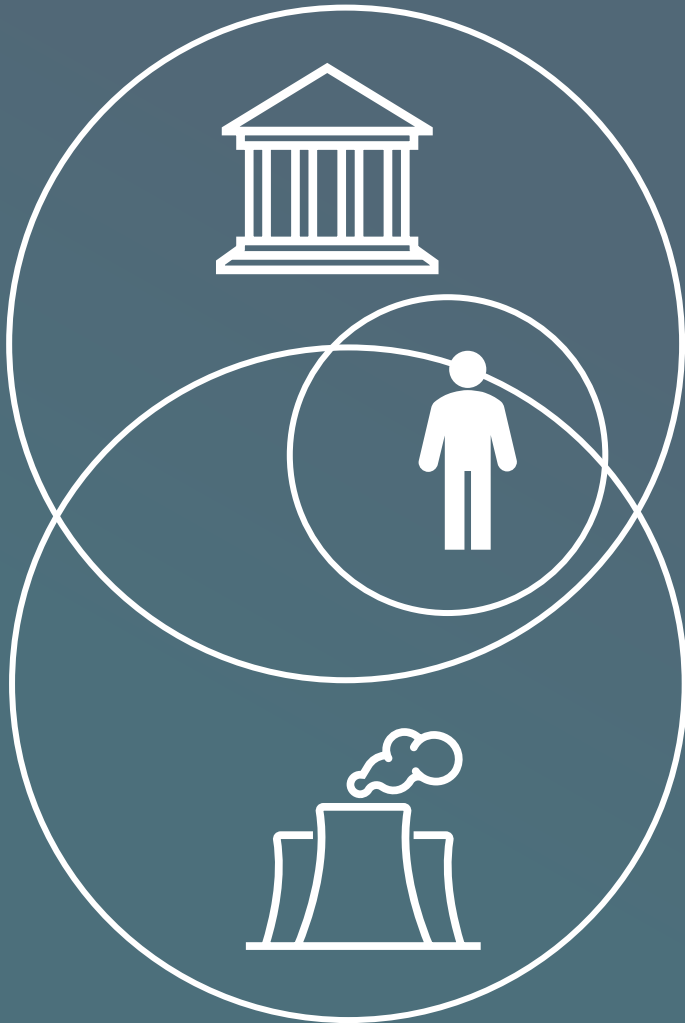
Planetary Boundaries

What is it? A Planetary Boundary is a framework that defines the bounds for which humans can safely operate within without substantially altering the Earth System's normal state.

What does it do? It is a measuring stick of how much an entity such as a country, government, organization or individual has exceeded their fair share of the planetary budget.

What does this mean for me? Planetary carbon budgets apply to organizations, individuals and government to operate within while keeping the health of the planet top of mind. It is a commitment to returning and keeping the Earth back to pre-industrial normal/steady state.

GHG Reporting Structure



Scope of reporting

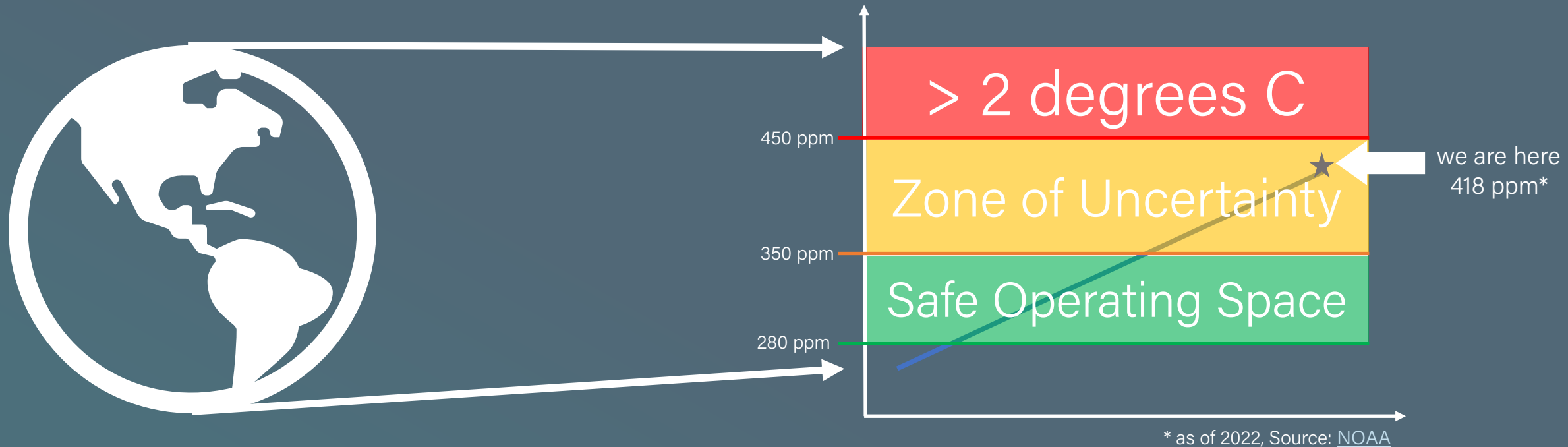
Government: all activity within its geographic boundary

Industry: emissions from operation of business

Individual: all activity from lifestyle

The GHG reporting structure and scope across entities are intertwined and interlinked.

Climate Change Planetary Boundary



The Planetary Boundary framework (Rockstrom et al., 2015) sets the Climate Change Safe Operating Space between 280-350 ppm of cumulative atmospheric CO₂ concentration where 280 is the atmospheric CO₂ concentration pre-industrial revolution, and 350 ppm is the threshold at which we maintain a pre-industrial revolution-like state. The Zone of Uncertainty, which lies between 350-450 ppm, is the point at which the climate is no longer in a Holocene-like state.

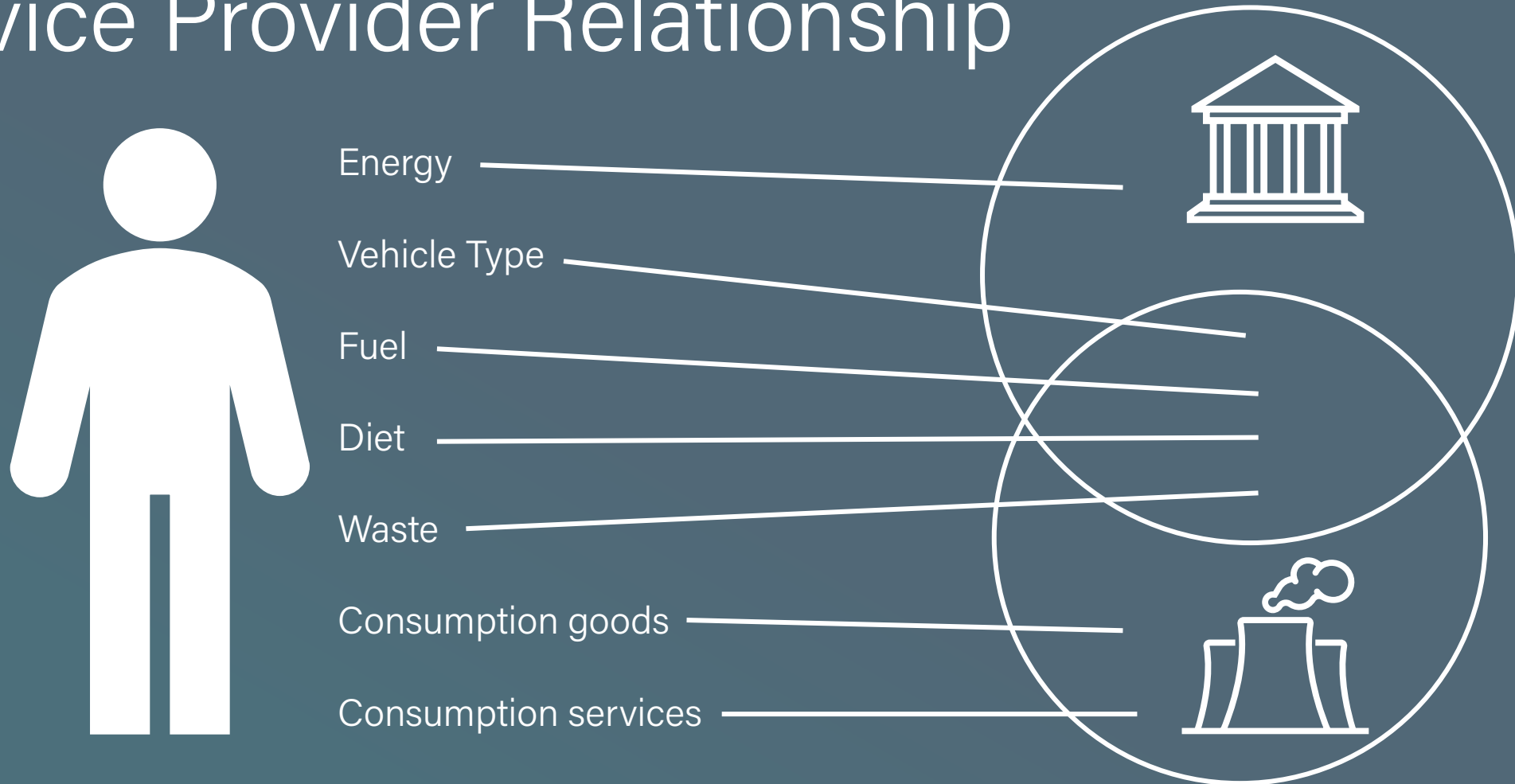
Allocating the Safe Operating Space

Sharing Principle: equal per capita

Every person shares rights to the atmosphere



Individual Carbon Footprint and Service Provider Relationship



An individual's carbon footprint is directly influenced by and related to the governing entity they lie within and the companies they participate in through the consumption of goods, respectively.

The Safe Operating Space

Equal per capita principle and Industry



Under the equal per capita sharing principle, the industry's share of the safe operating space should be driven by consumer consumption.

Companies whose GHG emissions are not aligned with preferences and utility of the individual will have exceeded their share of the Safe Operating Space.

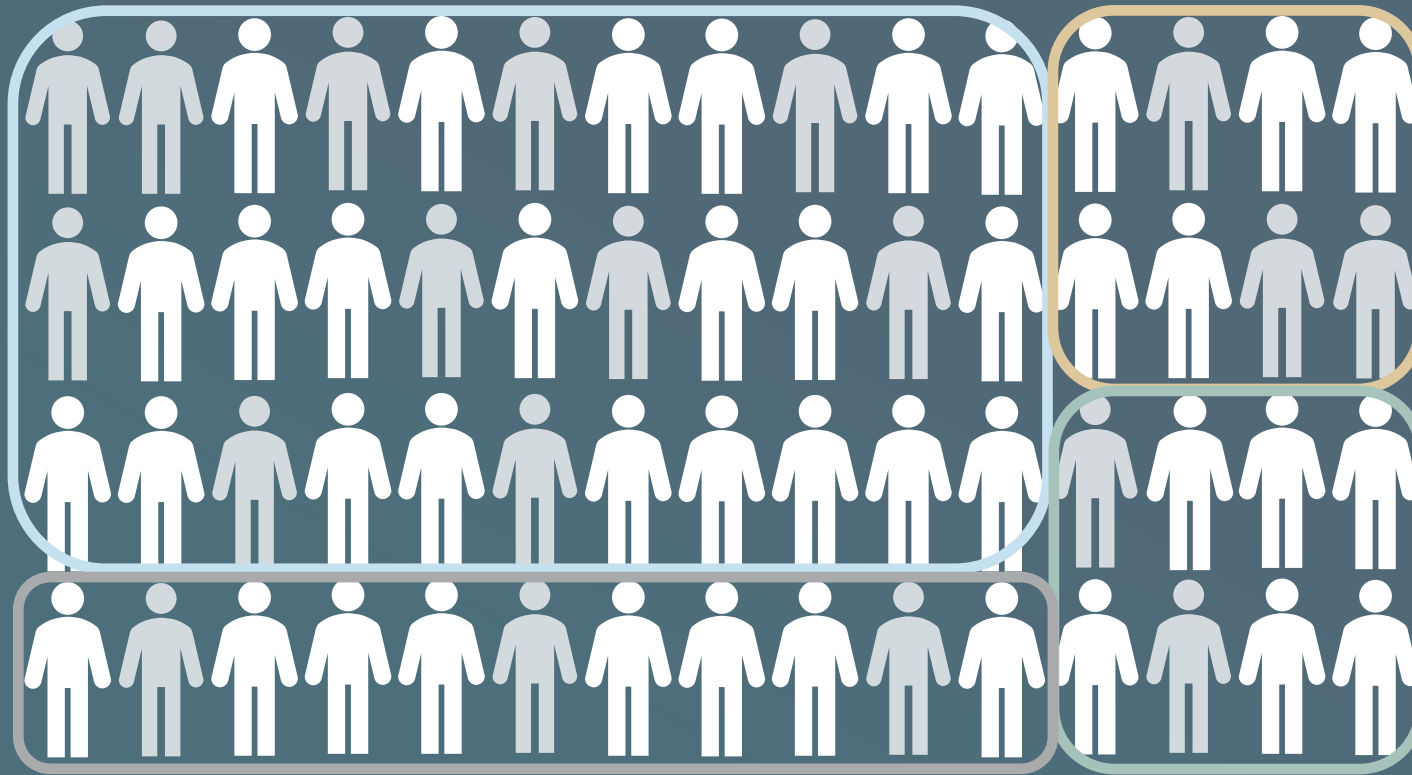
Since private final consumption expenditure represents a household's consumer spending, preferences and priority of goods and services, we can allocate the safe operating space based on a company's market share of final consumption expenditure.

Industry share of the safe operating space =
 $\% \text{ final consumption expenditure} \times \text{Safe Operating Space}$

(Hjalsted et al., 2021)

The Safe Operating Space

Equal per capita principle and Government



Government GHG reporting is geographically based and includes the GHG emissions of all individuals and businesses within the geographical bounds which also aligns with the equal per capita principle.